

In many cases, the data call will end without any call waiting signal being detected, step 14, in which case the tone detector 82 is simply deactivated until the next call.

- 5 If, however, a call waiting signal is detected by the tone detector, step 18, a signal generator 86 also embodied in the firmware of the PC card generates a signal via the PCMCIA slot to the PC card configuration software 84, step 20. Software 84 also includes alert generation capabilities, such that when it receives a signal from the signal generator 86, it co-operates with the operating system 64 to display a dialog box to the user via the monitor 56, informing
- 10 the user that a call waiting signal has been detected over the PSTN connection.

The dialog box will present the user with options, step 22, to take the new call (referred to below as "call 2", with the original data call being "call 1"), or to reject the call.

- 15 If the user chooses to reject the call, the PC card software 84 instructs the call management software 66 to maintain the data call as normal, step 24. The tone detector then continues to monitor the line for new call waiting signals step 12. A timeout may be built into the system in cases where a call waiting signal is repeated for e.g. 20 seconds, so that the further signals received from the same PSTN line and relating to the same waiting call are ignored due to the
- 20 user having chosen to reject this call.

- In cases where the user chooses to take the call in step 22, the user will lift the handset and choose how to take the call in the normal fashion. This generally involves a series of keypresses which generate DTMF tones to the PSTN exchange instructing it to maintain one or both calls. For example, pressing the "recall" button on the handset followed by digit 1 may terminate call 1 and switch to call 2, whereas pressing "recall" followed by digit 2 may toggle between the calls, i.e. place the active call (in this case call 1) on hold and switch to the held call (in this case call 2).
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- 30 The tone detector monitors the line for these DTMF signals, step 26 and if it detects a signal to disconnect call 1, step 28, generates an appropriate signal to the PC card software, which

in turn informs the call management software to disconnect the data call. When the data call ends, step 14, the tone detector is turned off, step 16.

If the tone detector detects DTMF signals instructing the exchange to toggle between calls,
5 step 30, a different signal is generated to the PC card software 84 and the PC card software
informs the call management software that the data call is now on hold. The call
management software maintains the data call in an inactive state, step 32, and awaits further
instructions to reactivate or to terminate the call.

10 The tone detector 84 continues to monitor for new DTMF signals and may detect either a
toggle signal, step 34 or a signal to disconnect call 2 and return to call 1, step 38.

In the case of a new toggle signal, step 84, a signal generated by the generator 86 causes the
PC card software to instruct the call management software to reactivate the data call. The
15 process reverts to step 26.

If a DTMF signal is detected instructing the exchange to disconnect call 2, step 38, the data
call is similarly reactivated and the process reverts to step 12.

20 By means of the invention, the user can use a single line to make e.g. Internet calls while
maintaining the capability of detecting the call waiting signals normally heard during voice
calls.

25 The invention is not limited to the embodiments described herein which may be varied or
modified without departing from the scope of the invention.